ABSTRACT OF THE DISCLOSURE

There is disclosed a combined absolute differential pressure transducer which consists of two sensors made from the same wafer silicon and selected to be adjacent to each other on the wafer. Since the same pressure is applied to the boss side of both sensors and a second pressure is applied to the opposite side of the differential sensor, deflection and the stress of the second sensor is determined by the pressure difference across the deflecting portion of the sensor. To obtain the same stresses in the thin section of each sensor, the overall active area of each sensor is different. For the same thickness read, the absolute value of P_2-P_1 where P_2 is the pressure applied to the front side of the two sensors and P_1 is the pressure applied to the differential sensor through the metal tube is less than P_2 to obtain the same stress in each sensor a great active area in the differential sensor is required. Conversely, if the absolute value of P_2-P_1 is greater than P_2, then a smaller active area in the differential sensor is required. By choosing adjacent sensors with the same web thickness, but different size active areas the thermal co-efficient and the thermal sensitivity are controlled by the impurity concentrations of the P regions and by how well they match each other. Thus, the thermal properties of the two individual sensors are closely controlled and matched to each other resulting in an improved overall combined absolute differential transducer.